

## OUTERMOST HARBOR DREDGING

Chatham, MA

Outermost Harbor Marine is a privately owned marina located in Outermost Harbor on the ocean side of Chatham, just south of the 1987 barrier beach break. Recently, a new break in the northern extent of the South Island Beach formed, causing continuous shoaling from the beaches north of the marina's inlet. This shoaling has filled the marina's channel with sand, causing a navigational hazard. Coastal Engineering Company (CEC) was hired to survey, design, and permit the expansion of the channel's dredging area, beach nourishment of the neighboring Quitneset Beach, and the reconfiguration of the floating docks in Outermost marina. The engineering work included conducting pre- and post-dredge hydrographic survey of the marina's channel and pre- and post-nourishment topographic survey of Quitneset Beach, designing the proposed channel depths and beach nourishment areas, and calculating both the proposed and actual dredge and beach nourishment volumes. CEC also provided construction contract administration throughout the construction process.

### SERVICES

- Pre- and post-dredge hydrographic surveys
- Pre- and post-nourishment topographic surveys
- Marine engineering design for channel dredging and beach nourishment
- Volumetric calculations for dredging and beach nourishment
- Floating dock reconfiguration engineering design
- Environmental permitting at the local, state and federal levels
- Construction contract administration

